

### REMARKS

Claims 1, 17, 33 and 49 have been amended. Claims 4, 5, 7, 8, 20, 21, 23, 24, 36, 37, 39, 40 and 53 have been canceled. Claims 10-16, 26-32 and 42-48 have been previously canceled. No new matter has been introduced. Claims 1-3, 6, 9, 17-19, 22, 25, 33-35, 38, 41 and 49-52 are now pending in this application. Applicant reserves the right to pursue the original claims and other claims in this application and in other applications.

Claims 1-9, 17-25, 33-41 and 49-53 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Merrill, *Intra-Pixel Reset Noise Cancellation* ("Merrill Article") in view of Merrill, U.S. Patent No. 6,940,551 ("Merrill Patent"). The rejection is respectfully traversed.

Claims 1, 17 and 33 have been amended to recite a plurality of pixels comprising a "reset portion," a "first storage circuit . . . wherein said first storage circuit comprises a first sample and hold circuit, wherein said first sample and hold circuit comprises a first sample and hold transistor switchably coupling a first terminal of a first storage capacitor with said reset portion," and a "second storage circuit . . . wherein said second storage circuit comprises a second sample and hold circuit, wherein said second sample and hold circuit comprises a second sample and hold transistor switchably coupling a first terminal of a second storage capacitor with said reset portion."

Claim 49 has been amended to recite a method for operating an active pixel sensor comprising “resetting a photosensitive element of a pixel within a reset portion, wherein said pixel comprises a first storage circuit and a second storage circuit . . . wherein said first storage circuit comprises a first sample and hold circuit, wherein said first sample and hold circuit comprises a first sample and hold transistor switchably coupling a first terminal of a first storage capacitor with said reset portion . . . wherein said second storage circuit comprises a second sample and hold circuit, wherein said second sample and hold circuit comprises a second sample and hold transistor switchably coupling a first terminal of a second storage capacitor with said reset portion.”

Applicant respectfully submits that the cited references do not disclose, teach or suggest at least this limitation. The Merrill Article relates to “intra-pixel” circuitry that reduces kTC noise and is located within each individual pixel. The Merrill Article does not disclose, teach or suggest a reset portion *and* a first and second storage circuit each comprising a sample and hold circuit comprising a sample and hold transistor. The reset noise cancellation pixel disclosed in the Merrill Article comprises at best only two reset portions N2 and N6.

Further, the pixel disclosed in the Merrill Article has many major drawbacks, as explained in the specification of the claimed invention in §§ 0018-0019. One drawback of the prior art is the amount of power consumed within the pixel when performing

correlated double sampling. For example, to maintain the bias voltage on N4 an excessive amount of power dissipation is required. However, in the claimed invention, correlated double sampling is performed within each pixel utilizing a method that reduces kTC noise while minimizing power dissipation. Thus, the pixel structure of the Merrill Article differs from the claimed invention. The pixel structure of the claimed invention enables the claimed invention to perform correlated double sampling without consuming excessive power as in the Merrill Article. Accordingly, the Merrill Article does not disclose, teach or suggest the claimed invention.

Further, the Merrill Patent does not remedy the deficiency in the Merrill Article. The Merrill Patent is relied on by the Office Action to describe a pixel as repeated in an array of arbitrary size. (Office Action at 2). Accordingly, the combination of the Merrill Article and the Merrill Patent does not disclose, teach or suggest all the limitations of the claimed invention.

Claims 2, 3, 6 and 9 depend on claim 1 and should be allowable along with claim 1 for at least the reasons provided above. Claims 18, 19, 22 and 25 depend on claim 17 and should be allowable along with claim 17 for at least the reasons provided above. Claims 34, 35, 38 and 41 depend on claim 33 and should be allowable along with claim 33 for at least the reasons provided above. Claims 50-52 depend on claim 49 and should be allowable along with claim 49 for at least the reasons provided above.

Withdrawal of the rejection and allowance of the claims is respectfully  
requested.

In view of the above amendment, Applicant believes the pending application is  
in condition for allowance.

Dated: October 12, 2006

Respectfully submitted,

By 

Thomas J. D'Amico

Registration No.: 28,371  
DICKSTEIN SHAPIRO LLP  
1825 Eye Street, NW  
Washington, DC 20006-5403  
(202) 420-2200  
Attorney for Applicant